NEUTRON SCATTER CAMERA FOR RADIATION DETECTION

TECHNOLOGY READINESS LEVEL: 6

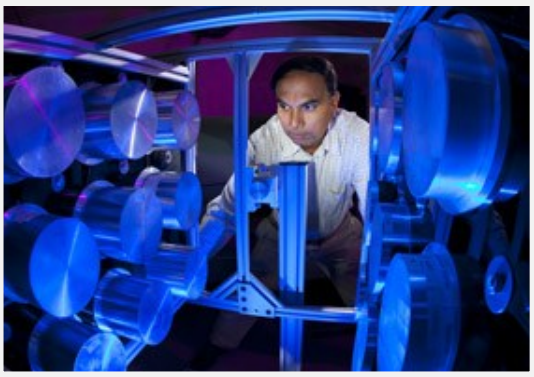
FIRST GENERATION AND ADVANCED PROTOTYPES HAVE BEEN SUCCESSFULLY DEPLOYED AND TESTED.

US PATENT # 7,741,613

US PATENT # 8,237,130

TECHNOLOGY SUMMARY

Sandia's neutron scatter camera is an innovative design which combines the benefits of gamma ray imaging with fast neutron imaging. The camera detects special nuclear material (SNM) and rejects backgrounds from naturally occurring radiation sources that can produce false alarms. Additionally, the camera can detect and localize neutrons at greater distances and through shielding since fast neutrons are more penetrating than gamma rays. One of the key advantages is higher signal to background over non imaging detectors.



Sandia's neutron camera design is sensitive, has good angular resolution, portable, and non hazardous. The design is scalable for shorter dwell times and longer stand-off detection.

POTENTIAL APPLICATIONS

- Treaty verification & monitoring
- Nuclear safeguards & nonproliferation
- Homeland security

TECHNOLOGICAL BENEFITS

- Compact size, portable
- Can filter out gamma background radiation "noise"
- Combines gamma ray and neutron detection in one instrument
- Good angular resolution: ~5 degrees achievable
- Scalable design to tailor sensitivity to user needs

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 10674

or visit

https://ip.sandia.gov

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